CLAIMS

1. A cooling tube system adapted for use within an interior of a refrigeration apparatus, for facilitating distribution of cooling air within said interior, said cooling tube system comprising:

at least one cooling tube disposed within said interior of said refrigeration apparatus;

cooling air generation means for generating a supply of cooling air;

air flow transmission means positioned so as to receive said supply of cooling air and for transmitting said supply of cooling air to a position adjacent a first end of said at least one cooling tube, so that at least a certain portion of said supply of cooling air is further transmitted into said first end of said cooling tube;

said at least one cooling tube having a second end opening to said interior of said refrigeration apparatus;

said certain portion of said supply of cooling air flowing through said second end of said at least one cooling tube, and into said interior of said refrigeration apparatus; and

said cooling air having temperature and volume properties sufficient so as to provide an improvement of gradient temperature within said refrigeration apparatus, relative to the state of said interior of said refrigeration apparatus in the absence of said cooling tube system.

2. A cooling tube system in accordance with claim 1, characterized in that said cooling tube system comprises a plurality of cooling tubes disposed within said interior of said refrigeration apparatus.

3. A cooling tube system in accordance with claim 2, characterized in that a

first set of said plurality of cooling tubes comprises a structural part of at least one refrigerator shelf.

4. A cooling tube system in accordance with claim 3, characterized in that said at least one refrigerator shelf is positioned within a freezer portion of said interior of said refrigeration apparatus, and said cooling air comprises temperature and volume properties sufficient so as to provide for an improvement in freeze time for food items placed directly on said at least one refrigerator shelf, and for food items placed in direct contact with a stream of said cooling air flowing into said refrigeration apparatus interior from a second end of at least one of said plurality of cooling tubes, relative to freeze time which would exist for said food items in the absence of said cooling tube system.

5. A cooling tube system in accordance with claim 4, characterized in that said improved freeze time is at least 5%.

6. A cooling tube system in accordance with claim 4, characterized in that said improved freeze time is in the range of 5% to 20%.

7. A cooling tube system in accordance with claim 1, characterized in that said gradient temperature improvement is at least 5%.

8. A cooling tube system in accordance with claim 1, characterized in that said gradient temperature improvement is in the range of 5% to 25%.

9. A cooling tube system in accordance with claim 2, characterized in that a first set of said plurality of cooling tubes are formed with a straight configuration.

10. A cooling tube system in accordance with claim 2, characterized in that a first set of said plurality of cooling tubes are formed with angle-cut configurations.

11. A cooling tube system in accordance with claim 2, characterized in that a

first set of said cooling tubes comprise formed cooling tubes.

12. A cooling tube system in accordance with claim 2, characterized in that a first set of said plurality of cooling tubes are formed with air dam configurations.

13. A cooling tube system in accordance with claim 3, characterized in that said first set of said plurality of cooling tubes are positioned so as to provide for shelving support of food items placed on said at least one refrigerator shelf.